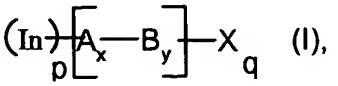
We claim

1. A composition comprising

a) 0.1 - 99.9 % by weight of a block copolymer of the formula:



(I),

wherein:

In represents a polymerization initiator fragment of a polymerization initiator which is selected from the group consisting of C_1-C_8-alkyl halides, C_6-C_{15}-aralkylhalides, C_2-C_8-haloalkyl esters, arene sulfonyl chlorides, haloalkanenitriles, α-haloacrylates and halolactones;

p represents one or two;

A and B represent polymer blocks which differ in polarity and consist of repeating units of ethylenically unsaturated monomers and wherein the difference in polarity is obtained by copolymerizing polymer blocks A and B with different amounts of functional monomers;

x and y represent numerals greater than zero and define the number of monomer repeating units in polymer blocks A and B;

X represents a polymer chain terminal group; and

q represents a numeral greater than zero; and

b) 0.1 - 99.9 % by weight of dispersible inorganic or organic pigment particles,

provided that thermosetting compositions are excluded.

2. A composition according to claim 1, wherein

In represents the polymerization initiator fragment of a polymerization initiator which is selected from the group consisting of C_1-C_8-alkyl halides, C_6-C_{15}-aralkylhalides, C_2-C_8-haloalkyl esters, arene sulfonyl chlorides, haloalkanenitriles, α-haloacrylates and halolactones; and

p represents one.

3. A composition according to claim 1, wherein the difference in polarity is obtained by copolymerizing polymer blocks A and B with different amounts of functional monomers.

4. A composition according to claim 3, wherein the content of functional monomers in each polymer block A or B differs from the other polymer block by at least 20 % by weight.

5. A composition according to claim 4, wherein the content of functional monomers in polymer block B is at least 20 % by weight higher as compared to polymer block A.

6. A composition according to claim 1, wherein A and B represent polymer blocks containing repeating units of polymerizable monomers selected from the group consisting of styrenes, acrolein and acrylic or C_1-C_4-alkylacrylic acid-C_1-C_{24}-alkyl esters.

7. A composition according to claim 1, wherein the polymer blocks B is more hydrophilic as compared to polymer block A and consists of higher amounts of monomers carrying functional groups and wherein the monomers are selected from the group consisting of acrylic or C_1-C_4-alkylacrylic acid or anhydrides and salts thereof, acrylic or C_1-C_4-alkylacrylic acid-mono- or -di-C_1-C_4-alkylamino-C_2-C_4-alkyl esters and salts thereof, acrylic or C_1-C_4-alkylacrylic acid-hydroxy-C_2-C_4-alkyl esters, acrylic or C_1-C_4-alkylacrylic acid-$(C_1$-C_4-alkyl$)_3$silyloxy-C_2-C_4-alkyl esters, acrylic or C_1-C_4-alkylacrylic acid-$(C_1$-C_4-alkyl$)_3$silyl-C_2-C_4-alkyl esters, acrylic or C_1-C_4-alkylacrylic acid-heterocyclyl-C_2-C_4-alkyl esters and salts thereof, C_1-C_{24}-alkoxylated poly-C_2-C_4-alkylene glycol acrylic or C_1-C_4-alkylacrylic acid esters, acrylic or C_1-C_4-alkylacrylamides, acrylic or C_1-C_4-alkylacrylmono- or -di-C_1-C_4-alkylamides, acrylic or C_1-C_4-alkylacryl-di-C_1-C_4-alkylaminoC_2-C_4-alkylamides and salts thereof, acrylic or C_1-C_4-alkylacryl-amino-C_2-C_4alkylamides, acrylonitrile, methacrylonitrile, 4-aminostyrene and salts thereof, di-C_1-C_4-alkylaminostyrene and salts thereof, vinyl substituted heterocycles, styrene sulfonic acid and salts, vinylbenzoeic acid and salts, vinylformamide and amidosulfonic acid derivatives.

8. A composition according to claim 1 wherein the polymer blocks A or B or both are reaction products with reactive polar monomers selected from the group consisting of glycidyl acrylic or C_1-C_4-alkylacrylic acid esters, 2-isocyanatoethyl acrylic or C_1-C_4-alkylacrylic acid esters and C_3-C_8-alkyl- or C_3-C_8-alkenyl-dicarboxylic acid anhydrides.

9. A composition according to claim 1 wherein the dispersible organic pigment particles of component b) are selected from the azo pigment group consisting of azo, disazo, naphthol, benzimidazolone, azo condensation, metal complex, isoindolinone, isoindoline, chinophthalon and dioxazine pigments and the polycyclic pigment group consisting of indigo, thioindigo, quinacridones, phthalocyanines, perylenes, perionones, anthraquinones, anthrapyrimidines, indanthrones, flavanthrones, pyranthrones,

anthantrones, isoviolanthrones, diketoypyrrolopyrroles, carbazoles and pearlescent flakes.

10. A composition according to claim 1 wherein the dispersible inorganic pigment particles of component b) are selected from the group consisting of aluminum, aluminum oxide, silicon oxide, silicates, iron(III) oxide, chromium(III) oxide, titanium(IV) oxide, zirconium(IV) oxide, zinc oxide, zinc sulfide, zinc phosphate, mixed metal oxide phosphates, molybdenum sulfide, cadmium sulfide, carbon black, graphite, vanadates, chromates, molybdates, and mixtures or crystal forms thereof.

11. A composition according to claim 1 which additionally contains binding agents and conventional additives.

12. A composition according to claim 11 wherein the conventional additives are selected from the group consisting of surfactants, stabilizers, anti-foaming agents, dyes, plasticizers, thixotropic agents, drying catalysts, anti-skinning agents and leveling agents.

13. A composition according to claim 1 comprising

a) 0.1 - 99.9% by weight of a block copolymer (I), wherein In, X, p and q are as defined in claim 1;

A represents a polymer block consisting of repeating units of acrylic or methacrylic acid-C_1-C_{24}-alkyl esters;

B represents a polymer block consisting of repeating units of acrylic or methacrylic acid-C_1-C_{24}-alkyl esters which are copolymerized with at least 50 % by weight of monomers carrying functional groups and wherein the monomers are selected from the group consisting of acrylic or methacrylic acid and salts thereof, acrylic or methacrylic acid-mono- or -di-C_1-C_4-alkylamino-C_2-C_4-alkyl esters and salts thereof, acrylic or methacrylic acid-hydroxy -C_2-C_4-alkyl esters, acrylic or methacrylamide, acrylic or methacrylic-mono- or -di-C_1-C_4-alkylamides, acrylic or methacryl-amino-C_2-C_4alkylamides, and vinyl substituted heterocycles selected from the group consisting of vinylpyrrolidone, vinylimidazole or salts thereof and vinylcarbazole;

x and y represent numerals greater than zero and define the number of monomer repeating units in A and B; and

X represents a polymer chain terminal group; and

b) 0.1 - 99.9 % by weight of dispersible pigment particles.

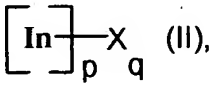
14. A pigment dispersion comprising a dispersed phase consisting of

a) a block copolymer of the formula I, wherein In, A, B, X, x, y, p and q are as defined in claim 1; and

b) dispersed pigment particles;

and a liquid carrier selected from the group consisting of water, organic solvents and mixtures thereof.

15. A process for preparing a composition according to claim 1, which comprises copolymerizing by atom transfer radical polymerization (ATRP) fragments A and B in the presence of polymerization initiator



(II),

wherein In, p and q are as defined in claim 1, and X represents Halogen and a catalytically effective amount of a catalyst capable of activating controlled atomic radical polymerization, replacing halogen X with a different polymer chain terminal group X' and adding dispersible pigment particles and optionally binder materials, fillers or other conventional additives.

16. A process for preparing a pigment dispersion compositon according to claim 1 which comprises dispersing in a liquid carrier the pigment particles in the presence of the block copolymer of the formula I, wherein In, A, B, X, x, y, p and q are as defined in claim 1.

17. A method for preparing coating compositions, prints, images, inks or lacquers which comprises incorporating the pigment dispersion according to claim 1 therein.

18. A coating composition which comprises 0.01-10 parts by weight of a pigment dispersion composition according to claim 1 per 100 parts by weight of a solid film-forming binder.

19. A process for preparing a coating composition according to claim 18 which comprises combining the pigment dispersion composition with the film-forming binder.